

TANNER MDA

Water-supplied air heater with axial fan

Water-supplied air heater with copper/aluminium heat exchanger.
Output from 14,5 to 117 kW.



For more information, downloads and videos, visit the Tanner MDA page on our website



The most versatile hot water air heater on the market

The TANNER MDA is a water-supplied suspended air heater which can expel air horizontally or vertically. The unit has a powerful axial fan which means it is suitable for many applications.

Mark offers a highly extensive range of accessories for the TANNER MDA allowing it to be aligned to all applications. For example, the unit can be made suitable for external air connection in combination with filtering and a mixing box for the destratification of fresh external air.

The unit is also available as an ATEX / EEX-model. (400V) - IP 44 (Ex II 2 G c Ex e IIB T3).

The TANNER MDA is designed for use in showrooms, changing rooms, industrial halls and garages.

Optional: speed controlled low noise EC-motor (230V/0-10V).
Advantages:

- The highest efficiency in case of speed control
- Up to 50% energy saving in case of partial load
- Almost completely linearly adjustable
- Long lifetime
- Low noise level
- Integrated electronic thermal protection

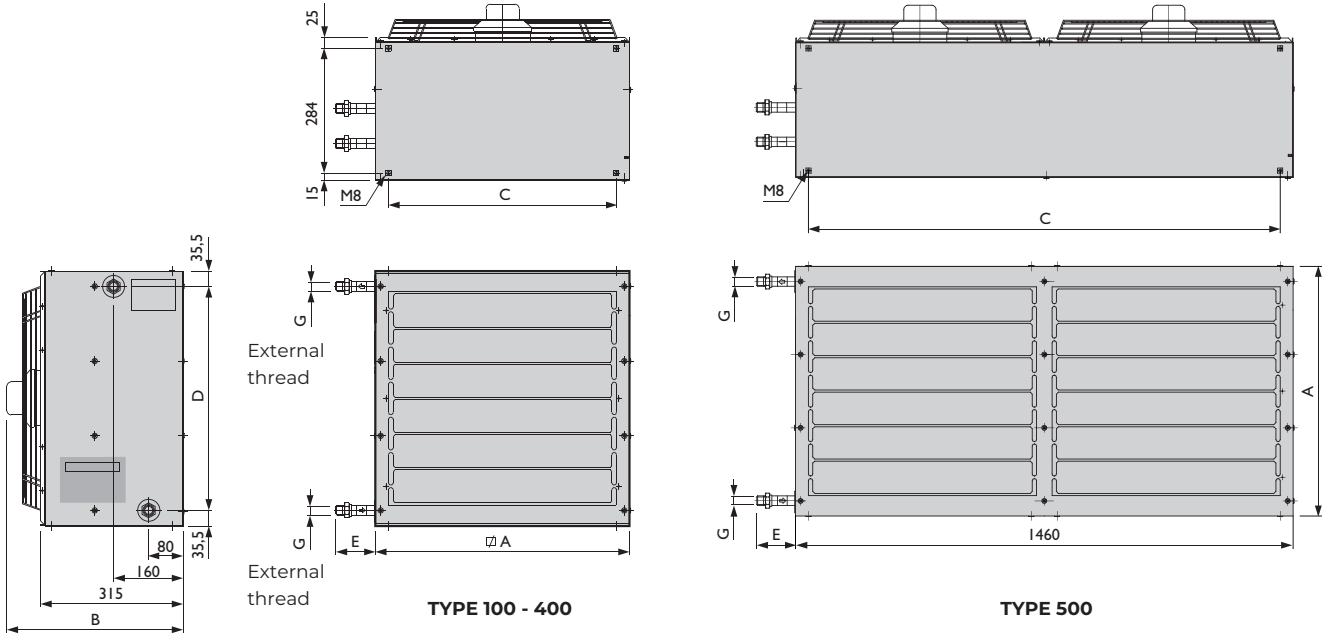
Product features

- Manufactured with a corrosion-resistant aluzinc housing as standard
- Copper/aluminium heat exchanger
- Highly versatile due to extensive configuration options
- Available as 230V or 400V
- IP class 54



Remote connection possible with the PinTherm Connect!

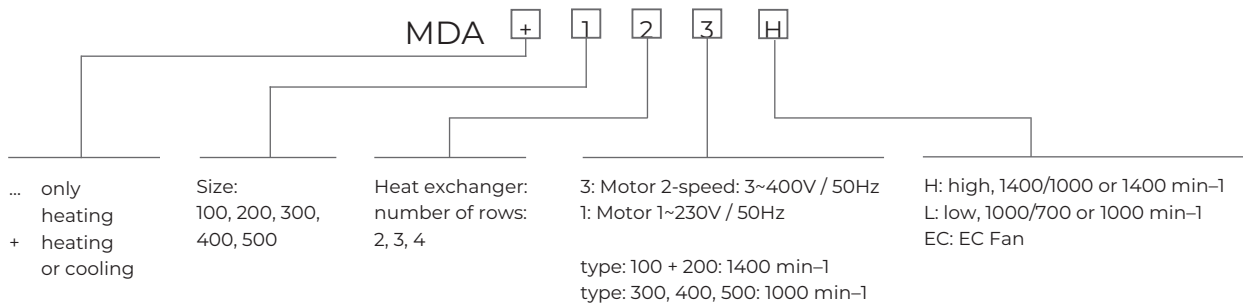
Dimensions



Type	A	B	C	D	E	2R	3R	4R
100	450	380	387	379	110	1"	1"	1"
200	580	385	517	509	113	1"	1"	1"
300	730	385	667	659	110	1"	1 1/4"	1 1/4"
400	860	405	797	789	115	1 1/4"	1 1/2"	1 1/2"
500	730	385	1392	659	80	-	2"	2"

Technical information

TYPE DESIGNATION



MDA low-speed - 1 phase 230V

Type		121L	131L	141L	221L	231L	241L	321L*	331L*	341L*	421L*	431L*	441L*	531L*	541L*
90/70 T15	kW	14,5	17,0	19,0	25,1	30,8	33,3	52,7	65,9	72,1	80,0	101,0	110,0	142	168
Water resistance T15	kPa	4	8	12	7	4	8	8	4	12	8	6	18	25	50
Outlet temperature at the heat exchanger	°C	41,7	49,4	59,2	42,7	53,0	58,8	38,8	48,0	54,0	38,6	48,6	54,1	52,3	61,9
80/60 T15	kW	11,9	14,1	15,9	20,6	25,4	27,8	43,3	54,1	60,2	65,7	83,1	91,6	118	141
Outlet temperature at the heat exchanger	°C	36,8	43,6	52,0	37,8	46,3	51,6	34,6	42,1	47,6	34,4	42,7	47,7	46	54,4
40/30 T15	kW	3,77	4,42	4,94	6,53	8,0	8,66	13,7	17,1	18,8	20,8	26,3	28,6	36,9	43,7
Speed	rpm	900	900	900	830	830	830	845	845	845	925	925	925	845	845
Air displacement	m ³ /h	1595	1446	1265	2656	2381	2233	6495	5857	5423	9933	8816	8217	11300	10600
Noise at 5 m	dB(A)	49	49	49	49	48	48	52	53	53	61	59	58	56	56
Weight without accessories	kg	22	23	24	32	34	36	43	46	49	55	59	63	95	98,5
Horizontal throw	m	12	10	8	17	15	12	25	22	19	35	31	27	25	22
Vertical throw	m	4	4	3,5	4,8	4,5	4	8,1	6,8	5,9	7,4	6,2	5,5	6,8	5,9
Consumed current (AC fan)	A	0,35	0,35	0,35	0,49	0,49	0,49	1,5	1,5	1,5	1,8	1,8	1,8	3,0	3,0
Consumed current (EC fan)	A	-	-	-	-	-	-	1,65	1,65	1,65	2,7	2,7	2,7	3,3	3,3
Nominal electric power (AC fan)	kW	0,077	0,077	0,077	0,113	0,113	0,113	0,33	0,33	0,33	0,4	0,4	0,4	0,66	0,66
Nominal electric power (EC fan)	kW	-	-	-	-	-	-	0,24	0,24	0,24	0,62	0,62	0,62	0,48	0,48

MDA high-speed - 1 phase 230V

Type		121H*	131H*	141H*	221H*	231H*	241H*
90/70 T15	kW	18,0	22,1	25,1	32,4	42,0	46,6
Water resistance T15	kPa	7	13	20	9	5	13
Outlet temperature at the heat exchanger	°C	37,4	43,9	53,4	37,6	46,4	51,6
80/60 T15	kW	14,7	18,3	20,9	26,6	34,5	38,7
Outlet temperature at the heat exchanger	°C	33,3	38,9	47,1	33,6	40,8	45,5
40/30 T15	kW	4,68	5,75	6,53	8,42	10,9	12,1
Speed	rpm	1400	1400	1400	1400	1400	1400
Air displacement	m ³ /h	2365	2244	1914	4202	3932	3734
Noise at 5 m	dB(A)	54	55	55	57	53	53
Weight without accessories	kg	22	23	24	32	34	34
Horizontal throw	m	15	13	11	20	19	17
Vertical throw	m	6,9	6,8	6,3	7,7	7,6	7,2
Consumed current (AC fan)	A	0,6	0,6	0,6	1,15	1,15	1,15
Consumed current (EC fan)	A	0,98	0,98	0,98	2,2	2,2	2,2
Nominal electric power (AC fan)	kW	0,13	0,13	0,13	0,23	0,23	0,23
Nominal electric power (EC fan)	kW	0,125	0,125	0,125	0,32	0,32	0,32

* Available with speed controlled EC-motor.

MDA low-speed - 3 phase 400V

Type		223L	233L	243L	323L	333L	343L	423L	433L	443L	533L	543L
90/70 T15	kW	26,2	32,4	35,1	52,7	65,9	72,1	84,0	107,0	117,0	142	168
Water resistance T15	kPa	6	4	9	8	4	12	9	7	21	25	50
Outlet temperature at the heat exchanger	°C	41,9	52,0	57,7	38,8	48,0	54,0	37,7	47,3	52,7	52,3	61,9
80/60 T15	kW	21,6	26,7	29,3	43,3	54,1	60,2	68,9	88,1	97,4	118	141
Outlet temperature at the heat exchanger	°C	37,1	45,4	50,6	34,6	42,1	47,6	33,6	41,6	46,5	46	54,4
40/30 T15	kW	6,81	8,42	9,13	13,7	17,1	18,8	21,8	27,8	30,4	36,9	43,7
Speed	rpm	1000	1000	1000	910	910	910	870	870	870	910	910
Air displacement	m³/h	2865	2574	2414	6495	5857	5423	10868	9735	9064	11300	10600
Noise at 5 m	dB(A)	49	48	48	52	53	53	61	59	59	56	56
Weight without accessories	kg	32	34	36	43	46	46	52	61	64	95	98,5
Horizontal throw	m	17	15	13	25	22	19	35	31	28	25	22
Vertical throw	m	5,9	4,5	4	8,1	6,8	5,9	8,5	6,9	5,8	6,8	5,9
Consumed current	A	0,3	0,3	0,3	0,85	0,85	0,85	1,25	1,25	1,25	1,7/0,88	1,7/0,88
Nominal electric power	kW	0,12	0,12	0,12	0,38	0,38	0,38	0,6	0,6	0,6	1,2	1,2

MDA high-speed - 3 phase 400V

Type		123H	133H	143H	223H	233H	243H
90/70 T15	kW	18,0	22,1	25,1	32,4	42,0	46,6
Water resistance T15	kPa	7	13	20	9	5	13
Outlet temperature at the heat exchanger	°C	37,4	43,9	53,4	37,6	46,4	51,6
80/60 T15	kW	14,7	18,3	20,9	26,6	34,5	38,7
Outlet temperature at the heat exchanger	°C	33,3	38,9	47,1	33,6	40,8	45,5
40/30 T15	kW	4,68	5,75	6,53	8,42	10,9	12,1
Speed	rpm	1330	1330	1330	1350	1350	1350
Air displacement	m³/h	2365	2244	1914	4202	3932	3734
Noise at 5 m	dB(A)	54	55	55	57	53	53
Weight without accessories	kg	22	23	24	32	34	36
Horizontal throw	m	15	13	11	20	19	17
Vertical throw	m	6,9	6,8	6,3	7,7	7,6	7,2
Consumed current	A	0,36	0,36	0,36	0,51	0,51	0,51
Nominal electric power	kW	0,16	0,16	0,16	0,216	0,216	0,216

Capacity calculation for other water temperatures

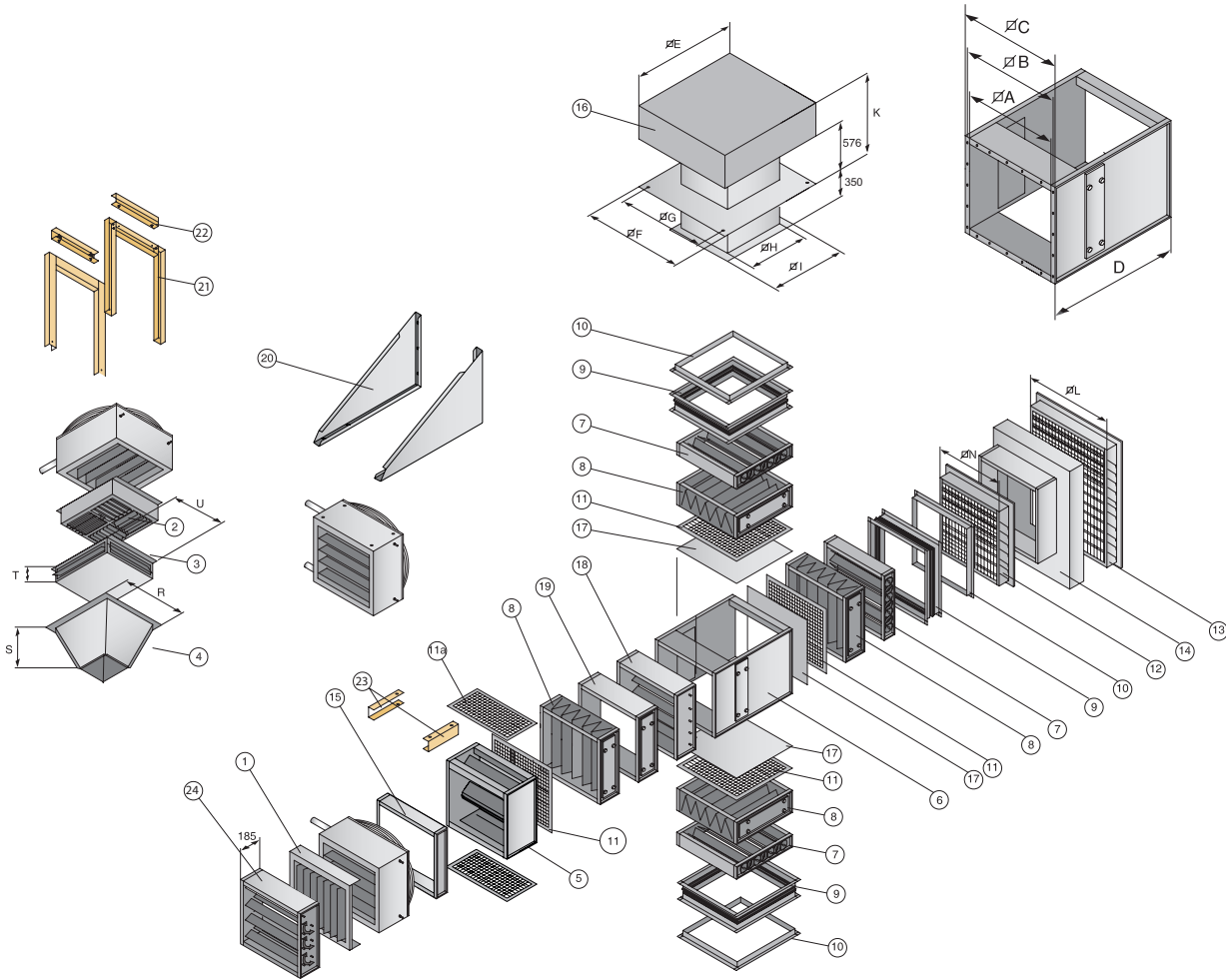
ΔT_1	ΔT_2															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
10	0,26	0,35	0,44	0,53	0,62	0,71	0,80	0,89	1,04	1,14	1,23	1,34	1,44	1,54	1,64	1,74
15	0,22	0,31	0,39	0,49	0,58	0,67	0,77	0,85	0,96	1,06	1,17	1,26	1,36	1,46	1,56	1,66
20	0,18	0,27	0,36	0,46	0,55	0,64	0,74	0,82	0,92	1,00	1,10	1,20	1,29	1,40	1,50	1,61
30	0,11	0,21	0,30	0,39	0,48	0,57	0,66	0,77	0,86	0,95	1,05	1,15	1,25	1,36	1,48	X
40	X	0,11	0,21	0,32	0,43	0,52	0,62	0,71	0,80	0,90	1,00	1,10	1,20	1,30	X	X
50	X	X	0,12	0,22	0,32	0,45	0,55	0,64	0,74	0,83	0,93	1,03	1,14	X	X	X
60	X	X	X	0,15	0,26	0,36	0,46	0,56	0,66	0,76	0,86	0,96	X	X	X	X

ΔT_1 = Temperature difference hot water inlet minus outlet ΔT_2 = Average water temperature minus air inlet temperature

Calculation example: Water temperature = 40/30 T inlet = 15 °C
 $\Delta T_1 = 40 - 30 = 10K$ $\Delta T_2 = 35 - 15 = 20K$

Tanner MDA 541L has a capacity of 168 kW at a water temperature of 90/70 T 15 °C
 168 kW x factor 0,26 = 43,68 kW

Accessories – additional sections



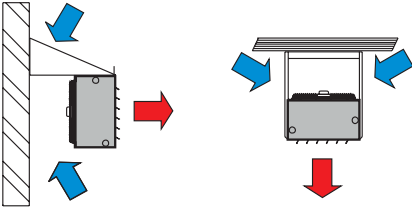
Position Description

- | | | | |
|-----|----------------------------------|----|---|
| 1 | Vertical louvres | 12 | Weather grill ≤ 50% fresh air intake |
| 2 | Downflow hood 4-sided vertical | 13 | Weather grill > 50%-100% fresh air intake |
| 3 | Downflow hood 4-sided horizontal | 14 | Transition piece for 13 |
| 4 | Destratification hood | 15 | Empty section 120 mm |
| 5 | Mixing box (short) incl. dampers | 16 | Rain cap incl. adhesive plate (aluminium) |
| 6 | Mixing box for dampers | 17 | Blanking plate |
| 7 | Damper | 18 | Motor protection damper |
| 8 | Filter box with filter (EU 3) | 19 | Empty section 240 mm |
| 9 | Flexible connection | 20 | Wall bracket |
| 10 | Corner profile | 21 | Ceiling bracket, vertical |
| 11 | Mesh | 22 | Shock absorber set for 21 |
| 11a | Mesh | 23 | Ceiling bracket, horizontal |
| | | 24 | Induction damper |

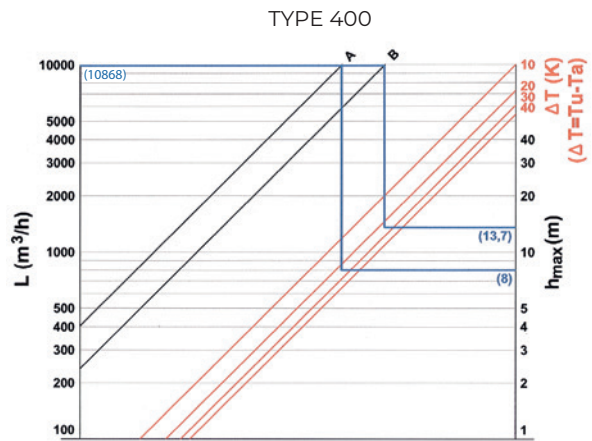
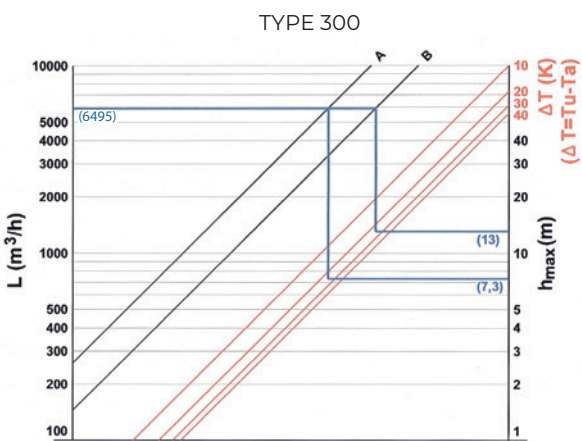
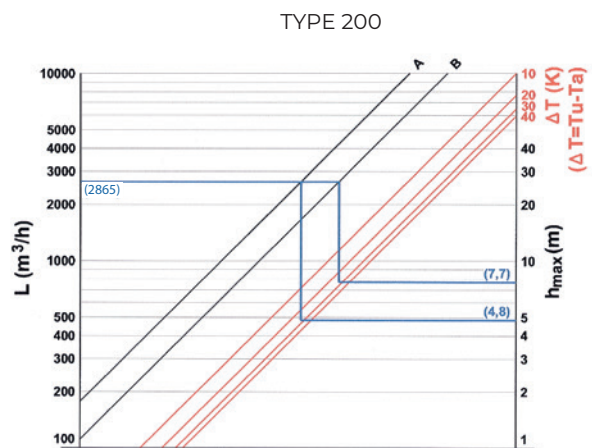
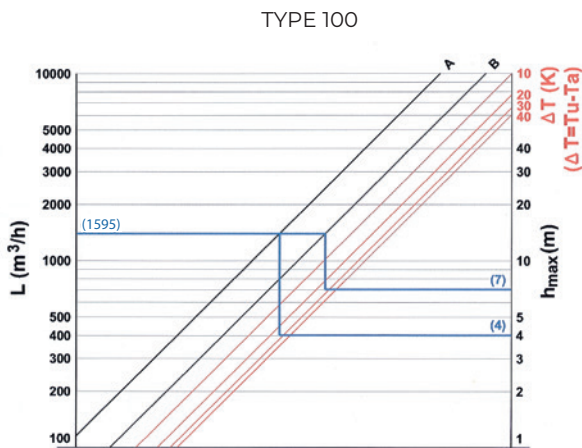
Type	A	B	C	D	E	F	G	H
100	390	415	443	463	690	740	690	380
200	520	545	573	593	920	920	820	510
300	670	695	723	743	1180	1240	975	665
400	800	835	853	873	1420	1240	1110	800

Type	I	K	L	N	R	S	T	U
100	440	800	516	386	439	212	120	406
200	570	895	666	516	573	253	151	530
300	720	940	796	666	724	300	175	680
400	860	1075	1005	796	853	329	220	815

Assembly/location suggestions



Tanner MDA maximum assembly height for



Calculation example:

- Tanner MDA 123L (Type 100)
- The table indicates that the air displacement with this unit is: $L = 1595 \text{ m}^3/\text{h}$
- If the intake temperature (T_a) is 15°C , the table shows that the outlet temperature (T_u) will be 41.7°C .

The temperature difference is:

$$Dt = T_u - T_a$$

$$Dt = 42.8 - 15$$

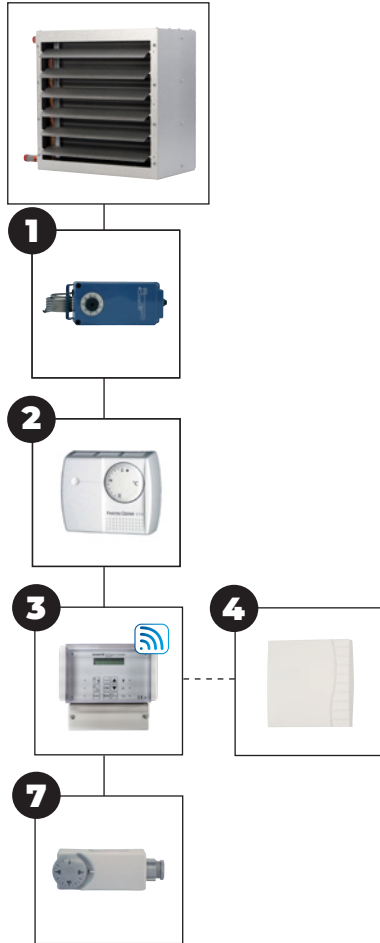
$$Dt = 26.7\text{K}$$

- The table (TYPE 100) indicates that:
 - A or the basic model, without accessories, the max. suspension height is: = 4m
 - B or the combination with a destratification hood, the max. suspension height is: = 7m

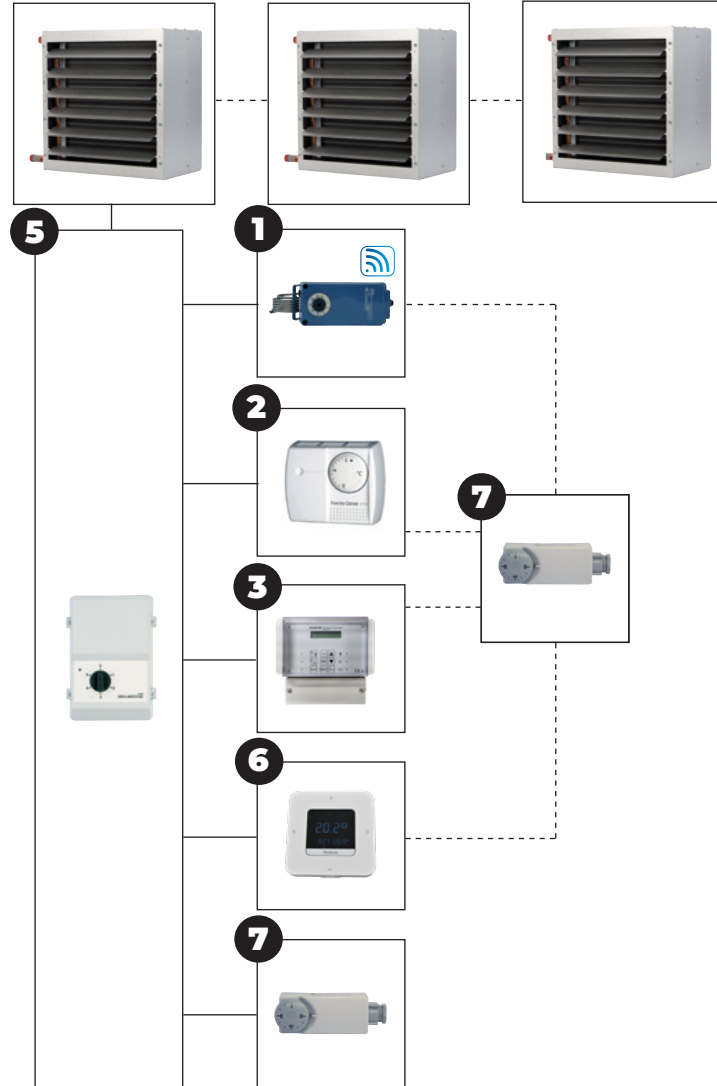
Controls (Not EEX)

AC-motor

230V - 1 unit



230V or 400V - multiple units



Maximum amount of units is depending on the selected 5-step regulator.

Control combination options AC Motor - 1 unit

Tanner MDA + **1**

Tanner MDA + **2**

Tanner MDA + **3**

Tanner MDA + **3** + **4**

Tanner MDA + **7**

See price list for description and code numbers of the relevant items

Control combination options AC Motor - multiple units

Tanner MDA + **5**

Tanner MDA + **5** + **1**

Tanner MDA + **5** + **2**

Tanner MDA + **5** + **3**

Tanner MDA + **5** + **6**

Tanner MDA + **5** + **7**

Tanner MDA + **5** + **1** + **7**

Tanner MDA + **5** + **2** + **7**

Tanner MDA + **5** + **3** + **7**

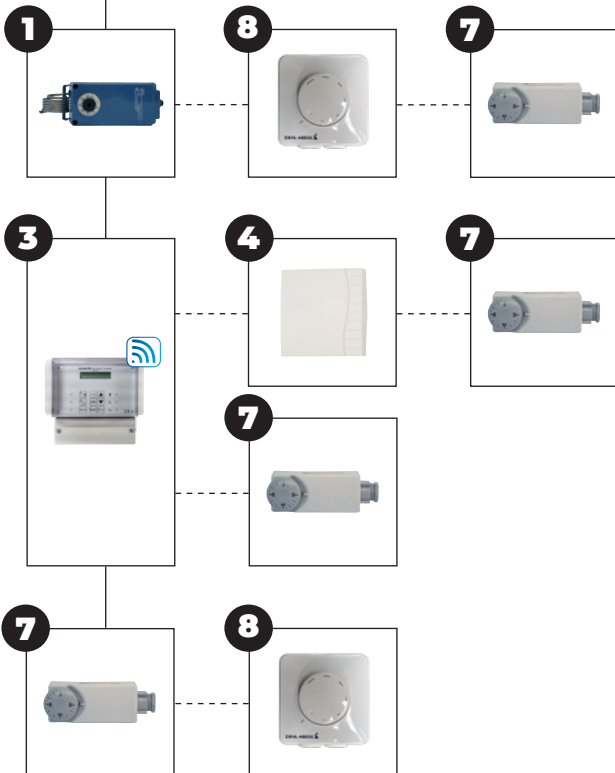
Tanner MDA + **5** + **6** + **7**

5 = - 5-step regulator for 230V (6A-14A) or 400V (2A-7A)
 - High / Low / Off Control for 400V (7A). See pricelist

EC-motor



Max. 8 units



Control combination options EC Motor - multiple units

- Tanner MDA + **1**
- Tanner MDA + **1** + **8**
- Tanner MDA + **1** + **8** + **7**
- Tanner MDA + **3**
- Tanner MDA + **3** + **4**
- Tanner MDA + **3** + **4** + **7**
- Tanner MDA + **3** + **7**
- Tanner MDA + **7**
- Tanner MDA + **7** + **8**

See price list for description and code numbers of the relevant items